

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows.

1. (Original) A DNA fragment having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 35, SEQ ID NO: 36 and SEQ ID NO: 37.
2. (Original) A plasmid or a partial DNA fragment thereof, characterized by comprising a DNA replication region having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 35, SEQ ID NO: 36 and SEQ ID NO: 37.
3. (Original) A DNA fragment having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 1, SEQ ID NO: 4, SEQ ID NO: 14, SEQ ID NO: 17 and SEQ ID NO: 22.
4. (Original) A plasmid or a partial DNA fragment thereof, characterized by comprising a coding region for a DNA replication-related protein having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 1, SEQ ID NO: 4, SEQ ID NO: 14, SEQ ID NO: 17 and SEQ ID NO: 22.
5. (Original) A plasmid or a partial DNA fragment thereof, characterized by comprising a coding region for a DNA replication-related protein having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 1, SEQ ID NO: 4, SEQ ID NO: 14, SEQ ID NO: 17 and SEQ ID NO: 22 and comprising a DNA replication region having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 35, SEQ ID NO: 36 and SEQ ID NO: 37.
6. (Original) A DNA fragment having the nucleotide sequence set forth as SEQ ID NO: 76.
7. (Original) A plasmid or a partial DNA fragment thereof, characterized by comprising a promoter region having the nucleotide sequence set forth as SEQ ID NO: 76.

8. (Original) A plasmid or a partial DNA fragment thereof, characterized by comprising a coding region for a DNA replication-related protein having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 1, SEQ ID NO: 4, SEQ ID NO: 14, SEQ ID NO: 17 and SEQ ID NO: 22, comprising a DNA replication region having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 35, SEQ ID NO: 36 and SEQ ID NO: 37, and comprising a promoter region having the nucleotide sequence set forth as SEQ ID NO: 76.
9. (Currently Amended) A circular plasmid characterized by comprising a plasmid or a partial DNA fragment according to claim 1, 3, or 6 any one of claims 1 to 8, wherein the numbers of restriction endonuclease cleavage sites are *BamH I*: 2, *EcoR I*: 2, *Kpn I*: 1, *Pvu II*: 1, *Sac I*: 1 and *Sma I*: 1, and the size is approximately 5.4 kbp.
10. (Original) A plasmid having the nucleotide sequence set forth as SEQ ID NO: 73.
11. (Currently Amended) A plasmid or a DNA fragment according to claim 1, 3, or 6 any one of claims 1 to 10, characterized by being derived from a bacterium belonging to the genus *Rhodococcus*.
12. (Original) A DNA fragment having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 70, SEQ ID NO: 71 and SEQ ID NO: 72.
13. (Original) A plasmid or a partial DNA fragment thereof, characterized by comprising a DNA replication region having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 70, SEQ ID NO: 71 and SEQ ID NO: 72.
14. (Original) A DNA fragment having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 40, SEQ ID NO: 42, SEQ ID NO: 44, SEQ ID NO: 45, SEQ ID NO: 53, SEQ ID NO: 55, SEQ ID NO: 56, SEQ ID NO: 61, SEQ ID NO: 62 and SEQ ID NO: 69.

15. (Original) A plasmid or a partial DNA fragment thereof, characterized by comprising a coding region for a DNA replication-related protein having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 40, SEQ ID NO: 42, SEQ ID NO: 44, SEQ ID NO: 45, SEQ ID NO: 53, SEQ ID NO: 55, SEQ ID NO: 56, SEQ ID NO: 61, SEQ ID NO: 62 and SEQ ID NO: 69.
16. (Original) A plasmid or a partial DNA fragment thereof, characterized by comprising a coding region for a DNA replication-related protein having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 40, SEQ ID NO: 42, SEQ ID NO: 44, SEQ ID NO: 45, SEQ ID NO: 53, SEQ ID NO: 55, SEQ ID NO: 56, SEQ ID NO: 61, SEQ ID NO: 62 and SEQ ID NO: 69 and comprising a DNA replication region having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 70, SEQ ID NO: 71 and SEQ ID NO: 72.
17. (Original) A plasmid or a partial DNA fragment thereof, characterized by comprising a coding region for a DNA replication-related protein having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 40, SEQ ID NO: 42, SEQ ID NO: 44, SEQ ID NO: 45, SEQ ID NO: 53, SEQ ID NO: 55, SEQ ID NO: 56, SEQ ID NO: 61, SEQ ID NO: 62 and SEQ ID NO: 69, comprising a DNA replication region having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 70, SEQ ID NO: 71 and SEQ ID NO: 72, and comprising a promoter region having the nucleotide sequence set forth as SEQ ID NO: 76.
18. (Original) A DNA fragment having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 67 and SEQ ID NO: 47.
19. (Original) A plasmid or a partial DNA fragment thereof, characterized by comprising a mobilization protein region having at least one nucleotide sequence selected from the group consisting of the nucleotide sequences set forth as SEQ ID NO: 67 and SEQ ID NO: 47.
20. (Original) A DNA fragment having the nucleotide sequence set forth as SEQ ID NO: 75.

21. (Original) A plasmid or a partial DNA fragment thereof, characterized by comprising a mobilization-related region having the nucleotide sequence set forth as SEQ ID NO: 75.
22. (Currently Amended) A circular plasmid characterized by comprising a plasmid or DNA fragment according to claim 12, 14, or 18 ~~any one of claims 12 to 21~~, wherein the numbers of restriction endonuclease cleavage sites are *Bam*H I: 2, *Pvu* II: 4, *Sac* I: 3 and *Sma* I: 4, and the size is approximately 5.8 kbp.
23. (Original) A plasmid having the nucleotide sequence set forth as SEQ ID NO: 74.
24. (Currently Amended) A plasmid or a DNA fragment according to claim 12, 14, 18, or 20 ~~any one of claims 12 to 23~~, characterized by being derived from a bacterium belonging to the genus *Rhodococcus*.
25. (Original) A DNA fragment having the nucleotide sequence set forth as SEQ ID NO: 77.
26. (Original) DNA fragment characterized by comprising a promoter region having the nucleotide sequence set forth as SEQ ID NO: 77.
27. (Currently Amended) A shuttle vector replicable in bacteria belonging to the genus *Rhodococcus* and *E. coli*, and comprising a plasmid or partial DNA fragment thereof according to claim 1 or 12 ~~any one of claims 1 to 26~~ and a DNA region replicable in *E. coli*.
28. (Original) A vector characterized by being constructed using a shuttle vector according to claim 27.
29. (Currently Amended) A vector characterized by comprising a plasmid or DNA fragment according to claim 25 ~~any one of claims 6, 7, 25 or 26~~.
30. (Original) A vector according to claim 28 or 29, characterized by having inserted therein an aminoketone asymmetric reductase gene.
31. (Original) A vector according to claim 30, characterized in that the aminoketone asymmetric reductase gene is a nucleic acid coding for a protein consisting the amino acid sequence set forth as SEQ ID NO: 78, or a nucleic acid that codes for a protein having the amino acid

sequence set forth as SEQ ID NO: 78 with a deletion, insertion, substitution or addition of one or a plurality of amino acids, and having aminoketone asymmetric reduction activity.

32. (Original) A vector according to claim 30, characterized in that the aminoketone asymmetric reductase gene is a nucleic acid consisting the nucleotide sequence set forth as SEQ ID NO: 79, or a nucleic acid that hybridizes with nucleic acid having a nucleotide sequence complementary to the nucleotide set forth as SEQ ID NO: 79 under stringent conditions, and that codes for a protein having aminoketone asymmetric reduction activity.

33. (Original) A transformant containing a vector according to claim 28 or 29.

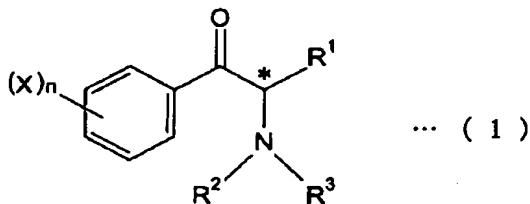
34. (Currently Amended) A transformant containing a vector according to claim 30any one of claims 30 to 32.

35. (Original) A method for production of an aminoketone asymmetric reductase, which comprises a culturing step in which a transformant according to claim 34 is cultured in medium that allows growth of said transformant, and

a purification step in which the aminoketone asymmetric reductase is purified from said transformant obtained in said culturing step.

36. (Original) A method for production of an optically active aminoalcohol, wherein an aminoketone asymmetric reductase obtained by the production method of claim 35 is reacted with an enantiomeric mixture of an α -aminoketone compound represented by the following general formula (1):

[Chemical Formula 1]



wherein X may be the same or different and represents at least one species selected from the group consisting of halogen, lower alkyl, hydroxyl optionally protected with a protecting group, nitro and sulfonyl;

n represents an integer of 0 to 3;

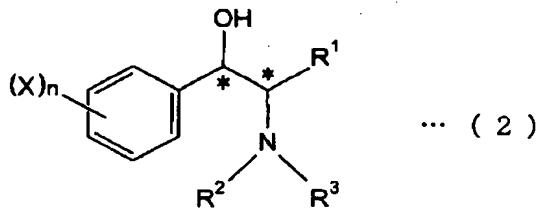
R¹ represents lower alkyl;

R² and R³ may be the same or different and represent at least one species selected from the group consisting of hydrogen and lower alkyl; and

* represents asymmetric carbon,

or a salt thereof, to produce an optically active aminoalcohol compound represented by the following general formula (2):

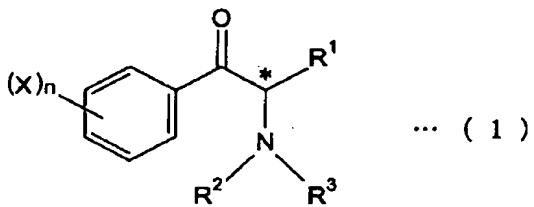
[Chemical Formula 2]



wherein X, n, R¹, R², R³ and * have the same definitions as above, and having the desired optical activity.

37. (Original) A method for production of an optically active aminoalcohol, wherein a transformant according to claim 34 is reacted with an enantiomeric mixture of an α -aminoketone compound represented by the following general formula (1):

[Chemical Formula 3]



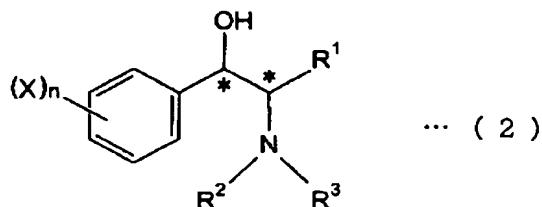
wherein X may be the same or different and represents at least one species selected from the group consisting of halogen, lower alkyl, hydroxyl optionally protected with a protecting group, nitro and sulfonyl;

n represents an integer of 0 to 3;

R¹ represents lower alkyl;

R^2 and R^3 may be the same or different and represent at least one species selected from the group consisting of hydrogen and lower alkyl; and
 * represents asymmetric carbon,
 or a salt thereof, to produce an optically active aminoalcohol compound represented by the following general formula (2):

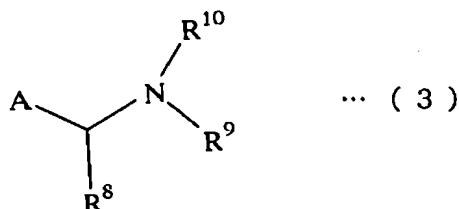
[Chemical Formula 4]



wherein X , n , R^1 , R^2 , R^3 and * have the same definitions as above, and having the desired optical activity.

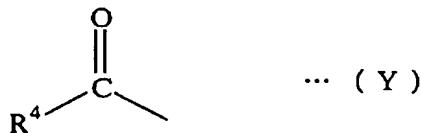
38. (Original) A production method for an optically active aminoalcohol according to claim 37, wherein the production method for the optically active aminoalcohol is carried out with further addition of a compound represented by the following general formula (3):

[Chemical Formula 5]



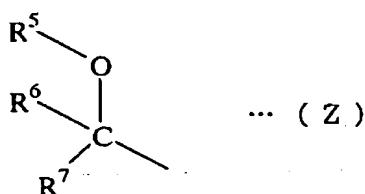
wherein A represents the following formula (Y) or (Z):

[Chemical Formula 6]



wherein R⁴ represents hydrogen, optionally substituted C1-3 alkyl, a C5-10 hydrocarbon ring which is bonded to R⁸ or a 5- to 8-membered heterocyclic skeleton containing 1-3 heteroatoms which is bonded to R⁸,

[Chemical Formula 7]



wherein R⁵ represents hydrogen, C1-3 alkyl or a 5- to 8-membered heterocyclic skeleton containing 1-3 heteroatoms which is bonded to R⁶ or R⁹;

R⁶ represents hydrogen, optionally substituted C1-3 alkyl, a C5-10 hydrocarbon ring which is bonded to R⁸ or a 5- to 8-membered heterocyclic skeleton containing 1-3 heteroatoms which is bonded to R⁵ or R⁹;

R⁷ represents hydrogen or optionally substituted C1-6 alkyl;

R⁸ represents hydrogen, carboxyl, optionally substituted C1-6 alkyl, a 5- to 8-membered heterocyclic skeleton containing 1-3 heteroatoms which is bonded to R⁴ or a C5-10 hydrocarbon ring which is bonded to R⁶;

R⁹ represents hydrogen, optionally substituted C1-6 alkyl, optionally substituted C1-6 alkyloxycarbonyl, optionally substituted acyl or a 5- to 8-membered heterocyclic skeleton containing 1-3 heteroatoms which is bonded to R⁵ or R⁶; and

R¹⁰ represents hydrogen or optionally substituted C1-6 alkyl,
or a pharmaceutically acceptable salt or solvate thereof, for production of an optically active aminoalcohol.